METHOD AND APPARATUS FOR A REFLECTIVE LIQUID CRYSTAL DISPLAY SYSTEM USING A ROTATIONAL OFFSET ANGLE TO IMPROVE PHOTOPIC CONTRAST

Abstract

A liquid crystal display system includes a reflective liquid crystal display comprising a first orientation layer to impart a first direction to a first region of a liquid crystal material and a second orientation layer to impart a second direction to a second region of the liquid crystal material. A light source is optically coupled to provide linearly-polarized light, having a polarization direction, to the liquid crystal display. A viewing screen is optically coupled to receive light from the liquid crystal display. The first orientation direction and the second orientation direction are each rotationally offset from an optical mode of the liquid crystal display in which the polarization direction bisects a twist angle defined by the first orientation direction and the second orientation direction of the orientation layers.